

### **Amendments to the Claims**

This listing of claims will replace all prior versions, and listings of claims in the application:

#### **Listing of Claims:**

Claims 1-10 (Canceled)

Claim 11 (Currently Amended): A pulse height analyzer for determination of [[the]] pulse height distribution of electronic pulses, comprising:

a set of comparators provided with a common input, for analog to digital conversion of the electronic pulses into converted pulses,

a set of latches wherein [[the]] inputs of the latches are connected to [[the]] outputs of respective comparators for recording passage of [[the]] corresponding threshold voltages by [[the]] rising edges ~~[[edge]]~~ of ~~a pulse~~ the converted pulses,

a priority encoder connected to ~~the latch~~ outputs of the latches for determination of [[a]] pulse height categories ~~category~~ consisting of converted pulses with a pulse height within [[a]] pulse height ~~interval~~ intervals defined by respective the corresponding threshold voltages, and

a micro controller that is adapted to count a ~~[[the]]~~ number of pulses within each

of the pulse height category categories.

wherein the threshold voltages of the comparators are non-equidistant from each other.

Claim 12 (Canceled)

Claim 13 (Currently Amended): A pulse height analyzer according to claim 11, further comprising a filter for filtering the electronic pulses to provide filtered pulses having providing a substantially constant delay from pulse start to maximum pulse amplitude of ~~the filtered pulse~~, and for ~~provision of~~ providing the filtered pulses ~~[[to]]~~ as the common input of the comparators.

Claim 14 (Currently Amended): A pulse height analyzer according to claim 11, further comprising a filter for filtering the electronic pulses to provide ~~providing~~ an output signal containing ~~[[the]]~~ filtered pulses with a DC-value substantially equal to zero.

Claim 15 (Currently Amended): A pulse height analyzer ~~according to claim 11~~, further comprising for determination of pulse height distribution of electronic pulses,  
comprising:

a set of comparators provided with a common input, for analog to digital  
conversion of the electronic pulses into converted pulses,

a set of latches wherein inputs of the latches are connected to outputs of

respective comparators for recording passage of corresponding threshold voltages by rising edges of the converted pulses,

a priority encoder connected to outputs of the latches for determination of pulse height categories consisting of converted pulses with a pulse height within pulse height intervals defined by the corresponding threshold voltages, and

a micro controller that is adapted to count a number of pulses within each of the pulse height categories, and

a current source~~[[,]] preferably a constant current source[[,]]~~ for connection to electrodes contacting an electrolyte in two chambers mutually connected by an orifice for Coulter counting of particles, ~~[[and]]~~ wherein the ~~thresholds~~ threshold voltages of the comparators are dependent on ~~[[the]]~~ an actual value of ~~[[the]]~~ generated electrode current, and whereby possible variations of the electrode current are substantially cancelled by corresponding variations of the voltage thresholds.

Claim 16 (Currently Amended): A pulse height analyzer according to claim 11, further comprising a plurality of sets of comparators for pulse height determination of input electronic pulses of different amplification.

Claim 17 (Currently Amended): A pulse height analyzer according to claim 11, further comprising circuitry for resetting the latches a predetermined time period after start of a converted pulse, the time period being independent of the pulse height and ~~[[the]]~~ pulse

width.

Claim 18 (Currently Amended): An integrated circuit comprising [[a]] the pulse height analyzer according to claim 11.

Claim 19 (Currently Amended): A field programmable gate array comprising [[a]] the pulse height analyzer according to claim 11.

Claim 20 (Currently Amended): An application specific integrated circuit comprising [[a]] the pulse height analyzer according to claim 11.

Claim 21 (New): A pulse height analyzer according to claim 15, wherein the current source is a constant current source.

Claim 22 (New): A pulse height analyzer according to claim 15, further comprising a filter for filtering the electronic pulses to provide filtered pulses having a substantially constant delay from pulse start to maximum pulse amplitude, and for providing the filtered pulses as the common input of the comparators.

Claim 23 (New): A pulse height analyzer according to claim 15, further comprising a filter for filtering the electronic pulses to provide an output signal containing filtered pulses with a DC-value substantially equal to zero.

Claim 24 (New): A pulse height analyzer according to claim 15, further comprising a plurality of sets of comparators for pulse height determination of input electronic pulses

of different amplification.

Claim 25 (New): A pulse height analyzer according to claim 15, further comprising circuitry for resetting the latches a predetermined time period after start of a converted pulse, the time period being independent of the pulse height and pulse width.

Claim 26 (New): An integrated circuit comprising the pulse height analyzer according to claim 15.

Claim 27 (New): A field programmable gate array comprising the pulse height analyzer according to claim 15.

Claim 28 (New): An application specific integrated circuit comprising the pulse height analyzer according to claim 15.